

OCCURRENCE OF DEPRESSIVE DISORDERS AMONG STUDENTS OF THE FACULTY OF HEALTH SCIENCES OF THE JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

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ABSTRACT

Introduction: Student surveys confirm the incidence of depressive disorders with multifactorial origin, often with an atypical image, which can cause a lack of specific help. Therefore, an important role of the university is to provide students with conditions that promote mental health and show support in didactic process.

Aim of the study: To assess incidence of depressive disorders among students of a second-cycle programme of the Faculty of Health Sciences, Department of Medical College, Jagiellonian University, Cracow.

Material and methods: The study covered 236 students in the following faculties: obstetrics, nursing, and physiotherapy, aged 21-54 years. A diagnostic questionnaire method, survey technique was used with use of the author's questionnaire, Beck Depression Inventory (BDI-II) and Rosenberg Self-Esteem Scale (SES). Results were developed in Statistica 13.1 program, and the statistical significance level was assumed to be $p < 0.05$.

Results: Depressive disorders, usually of mild or moderate severity, were confirmed in every third student. They appeared in individuals who declared other than positive relations with family, suicidal thoughts, depressive disorders in loved ones, feeling stress, and experiencing or witnessing a traumatic event. Positive correlations were confirmed between incidence of depressive disorders and loss of interest and joy, sense of sadness, depression, fatigue, exhaustion and rejection, pessimistic vision of future, anxiety, difficulty in focusing attention, avoiding social contacts, inability to solve problems, aggressiveness, impulsivity and low self-esteem.

Conclusions: Multidimensional relations between the incidence of depressive disorders in students and sociodemographic, psychological, and health-related factors, and the course of studies require an in-depth study, the results of which will allow us to take action to improve support systems aimed at improving the mental condition of students.

Key words: depressive disorders, student, support.

INTRODUCTION

Multidimensional relation between undertaking studies and a student's mental condition is a subject of interest for many researchers. This stage in life shapes the first, full independence, at the same time postponing the introduction into "adult life", but it is also a time to experience separation from the family and stress associated with emotional and intellectual effort. For many people, this situation can be a cause of mental crisis [1].

The incidence of depressive disorders is related to the stage of study – at first, adaptation to academic life, experiencing failure, and at a later stage, disappointment with the faculty, dissatisfaction with

the organisation and level of teaching, or the subject matter treated by lecturers [1]. The choice of a course of study, career path, struggling with competition, and the pressure of rapid change are also not without significance [2, 3]. The methods and forms of distance learning may also cause negative psychological effects such as fatigue, overload of tasks to be performed, and burnout, and contribute to the quality of students' lives. Remote working requires students to be independent, self-disciplined and able to work on their own. Lack of these features is associated with the feeling of stress. An additional factor generating stress in the course of remote learning is the lack of one's own room to learn and the possibility of full participation in on-line classes. Students'

opinions confirm that remote learning contributes to mood swings, worsening of relationships with peers and teachers, and physical and mental exhaustion and fatigue [4].

The factors associated with depressive disorders in students include genetic, cultural and environmental factors, gender, personality traits, and socio-economic status [2, 5]. Other factors predisposing to the development of depressive disorders during this period include the conflict of value systems, difficulties in assuming new social roles, identity crises, as well as a rapid pace of life, consumerism, the pursuit of "happiness at all costs" [2], and low self-esteem [6].

Depressive disorders in young people are often unrecognised due to unusual behaviour, treated as adolescent rebellion [7]. The most common symptoms are difficulty in focusing attention, deteriorating memory, fear of public speaking, negative judgment of appearance, difficulties in making decisions, anxiety about the future and health, a sense of constant fatigue, mental retardation, sadness, and depression as well as irritability and anxiety [8, 9]. The greatest risks of depressive disorders are suicidal thoughts and attempts [10].

The specificity of mental disorders among students shows how important it is for universities to create conditions that promote mental health and support students in the teaching process. Therefore, cooperation with mental health specialists should be taken into account, and the type of support offered by the university should be determined. An important role in this area is played by an individual approach to students and taking into account their health and resources depending on the field of study. In the cooperation between the student and supporting person it is important to trust each other and at the same time use the appropriate specialist treatment [1, 2, 9].

AIM OF THE STUDY

To assess the incidence of depressive disorders among students of a second-cycle programme of the Faculty of Health Sciences, Department of Medical College, Jagiellonian University in Cracow.

MATERIAL AND METHODS

The research covered 236 students of second-degree studies of the Faculty of Health Sciences, Department of Medical College, Jagiellonian University in the following faculties: nursing – 40.7% ($n = 96$), obstetrics – 27.5% ($n = 65$), and physiotherapy – 31.8% ($n = 75$), between October 2019 and January 2020. After obtaining information about the purpose of this study and the way of supplementing the research tools, the students gave their consent to participate

in a survey by filling in questionnaires as well as scale and inventory sheets in a paper version. The research took place during didactic classes.

Characteristics of the studied group

The majority of respondents were women – 92.4% ($n = 218$). The average age was 23.36 ± 3.51 years (age range from 21 to 54 years). In the study group 59.3% ($n = 140$) of students were in a relationship and 2.5% ($n = 6$) were parents. Most of the respondents, 90.3% ($n = 213$), had siblings. For 72.4% of the respondents, taking up higher education was related to accommodation in a dorm or renting a flat/room. For 64.4% ($n = 152$) of students the time spent at the university usually ranged from 15 to 30 hours per week, and the burden of a large number of classes was felt by 57.6% ($n = 136$) of the respondents.

The relationship with family was positive for 91.1% ($n = 215$) of students, and 96.2% ($n = 227$) of respondents could count on family support. Contact with people with depressive disorders in the immediate vicinity was reported by 23.3% ($n = 55$) of the respondents, of which 78.2% ($n = 43$) of the indications concerned the family.

Sense of stress several times a week was confirmed by 40.7% ($n = 96$) of students and daily 21.6% ($n = 51$). The most common way to react in this situation was to look for ways to solve the problem – 53.8% ($n = 127$) or waiting for support from relatives – 25.4% ($n = 60$). In the surveyed group of students 57.2% ($n = 135$) admitted that they participated in or witnessed a traumatic event (death of a loved one, threat to another person's life, domestic violence, and bullying). The experience of crisis situations was the reason why 1.7% ($n = 4$) of respondents attempted suicide, and 20.3% ($n = 48$) of respondents admitted to the presence of suicidal thoughts at some time.

Students were asked to indicate how often the selected behaviours and emotions accompany them. On the 4-point frequency scale, the highest arithmetic mean was found in case of fatigue, exhaustion ($\bar{x} = 2.62 \pm 0.85$), feeling of sadness, depression ($\bar{x} = 2.2 \pm 0.91$) and difficulty in focusing attention ($\bar{x} = 2.17 \pm 0.78$), and the lowest in the case of anxiety ($\bar{x} = 0.95 \pm 0.99$) and aggressiveness ($\bar{x} = 1.02 \pm 0.83$) (Table 1).

On the Rosenberg Self-Esteem Scale (SES) measuring the self-esteem level, the respondents received an average of 29.45 ± 5.57 points.

Statistical analysis showed that 37.7% ($n = 89$) of respondents had low self-esteem, 25.8% ($n = 61$) had medium self-esteem, and 36.4% ($n = 86$) had high self-esteem.

In the conducted research, the author's questionnaire, the SES scale, and Beck's Depression Inventory – second edition (BDI-II) were used. On the basis of

Table 1. Frequency of accompanied selected behaviours and emotions among the subjects

Behaviours and emotions accompanying the subjects	Frequency	
	\bar{x}	SD
Feeling tired, exhausted	2.62	0.85
Sense of sadness, depression	2.20	0.91
Difficulties in focusing attention	2.17	0.78
Impulsiveness	2.04	0.93
Reduced self-esteem	2.02	1.11
Pessimistic vision of the future	1.66	1.10
Loss of interest, feeling of joy	1.60	1.02
Avoiding contacts and socialising	1.44	0.85
Sense of rejection	1.39	1.06
Inability to solve problems	1.35	0.89
Aggressiveness	1.02	0.83
Anxiety situations	0.95	0.99

\bar{x} – average, SD – standard deviation, 0 – never, 1 – rarely, 2 – sometimes, 3 – frequently, 4 – very often

the questionnaire, the sociodemographic data concerning the course of studies and leisuretime activities, health situation, and self-assessment were collected. The SES scale examines the overall level of self-esteem and consists of 10 statements. Answers are given on a 4-level scale, where 1 means definitely agree and 4 means definitely disagree. Each answer is given 1 to 4 points. The range of points to be scored is from 10 to 40 points – the higher the score, the higher the self-esteem [11]. Beck Depression Inventory – second edition is a self-descriptive tool for measuring the severity of depression. This inventory consists of 21 groups of statements, and results are calculated by adding points from 21 statements. Each item is evaluated using a 4-stage scale. For each group of statements, it is possible to obtain from 0 to 3 points. A maximum of 63 points can be obtained. The following cut-off points are used in the interpretation of results: 0-13 – lack/minimal depression, 14-19 – mild, 20-28 – moderate, and 29-63 – severe [12].

The obtained results were developed in Statistica 13.1 software. The following variables were used for analysis: Mann-Whitney U test and χ^2 test. The Spearman's rank correlation coefficient was used to determine the correlation between 2 variables that did not meet the criterion of normal distribution. The statistical significance level was assumed to be $p < 0.05$.

RESULTS

The severity of depressive disorders among students of obstetrics, nursing, and physiotherapy

In the Beck Depression Inventory, students received an average of 10.09 ± 8.63 points. The highest score in BDI-II scale was obtained by physiotherapy students ($\bar{x} = 10.97 \pm 9.22$ points), followed by obstetrics ($\bar{x} = 10.05 \pm 8.71$ points) and nursing ($\bar{x} = 9.44 \pm 8.12$ points). The results of the BDI-II Inventory among the surveyed students are presented in Table 2.

The number of points in the BDI-II scale, indicating the lack of depression, was 70.3% ($n = 116$). Mild depression was observed in 14.4% ($n = 34$), moderate depression in 10.6% ($n = 25$), and severe depression in 4.7% ($n = 11$). The severity of depressive disorders among students of particular faculties is presented in Table 3.

Relations between the incidence of depressive disorders and selected variables

The statistical analysis did not show any relations between the incidence of depressive disorders and gender ($p = 0.472$), marital status ($p = 0.878$), having siblings ($p = 0.295$), permanent place of residence of the subjects ($p = 0.137$), and place of residence during studies ($p = 0.396$). Due to the lack of age diversity, the relationship between the severity of depressive disorders and the age of students in younger and older age groups was not analysed. The analysis of relations between the occurrence of depressive disorders and factors related to the course of studies showed that there was no relation between the incidence of

Table 2. Results of Beck Depression Inventory (BDI) among the surveyed students

Field of study	Results on BDI-II scale (points)						
	\bar{x}	SD	Me	Min.	Max.	Q1	Q3
Obstetrics	10.05	8.71	8.00	0.00	34.00	3.00	15.00
Nursing	9.44	8.12	8.00	0.00	32.00	3.00	14.50
Physiotherapy	10.97	9.22	10.00	0.00	37.00	3.00	17.00
Total	10.09	8.63	8.00	0.00	37.00	3.00	15.50
Significance	$H = 0.91, p = 0.635$						

\bar{x} – arithmetic mean, SD – standard deviation, Me – median, Min. – minimum, Max. – maximum, Q1 – lower quartile, Q3 – upper quartile, H – result of Mann-Whitney U test, p – value of test probability

Table 3. Severity of depressive disorders on the basis of the BDI-II scale among the respondents in particular fields of study

Depression	Field of study		
	Obstetrics	Nursing	Physiotherapy
	% (n)	% (n)	% (n)
Lack	70.8 (46)	74.0 (71)	65.3 (49)
Mild	12.3 (8)	13.5 (13)	17.3 (13)
Moderate	12.3 (8)	7.3 (7)	13.3 (10)
Severe	4.6 (3)	5.2 (5)	4.0 (3)

% – percentage, n – number of observations

these disorders and the number of hours spent at the university ($p = 0.196$) and the sense of burden resulting from studying ($p = 0.442$). There was no statistically significant correlation between the incidence or absence of depressive disorders and the field studied ($p = 0.470$), as well as between the level of depressive disorders in the surveyed students and the field studied by them ($p = 0.812$).

A relation was shown between the incidence of depressive disorders among the students and their assessment of family relationships – depressive disorders were more common in people describing their relationships as other than positive ($p = 0.004$). The presence of a statistically significant correlation was also shown between the occurrence of depressive disorders among students and the presence of depressive disorders in their relatives ($p < 0.001$). The subjects who had symptoms of depression more often confirmed the presence of depressive disorders in their loved ones.

A statistically significant correlation ($p < 0.001$) was reported between the incidence of depressive disorders and the frequency of stress – people with depressive disorders more often declared daily stress. Individuals who had symptoms of depressive disorders also more often participated in or witnessed a traumatic event ($p = 0.010$). The results also confirmed the relation ($p < 0.001$) between the incidence of depressive disorders among the subjects and the presence of suicidal thoughts. Individuals with depressive symptoms more often declared the presence of suicidal thoughts.

Analysis of the relationship between the selected behaviours and emotions and the incidence of depressive disorders in the studied group confirmed that people who had symptoms of depressive disorders presented the following behaviours and emotions more frequently (Table 4).

The study confirmed that the incidence of depressive disorders correlated negatively with the results obtained in the SES scale ($p < 0.001$, $R = -0.68$). The better the self-esteem of subjects, the less frequent were the symptoms of depressive disorders, and vice versa.

Table 4. Relations between the incidence of depressive disorders based on BDI-II scale and the frequency of accompanying selected behaviours and emotions

Depressive disorders/selected behaviour and emotions	R	p
Aggressiveness	0.28	< 0.001
Impulsiveness	0.19	0.004
Sense of sadness, depression	0.61	< 0.001
Loss of interest, feeling of joy	0.63	< 0.001
Avoiding contacts and socialising	0.46	< 0.001
Inability to solve problems	0.40	< 0.001
Sense of rejection	0.51	< 0.001
Anxiety situations	0.53	< 0.001
Feeling tired, exhausted	0.51	< 0.001
Difficulties in concentration	0.47	< 0.001
Pessimistic vision of the future	0.55	< 0.001

R – value of Spearman's rank correlation, p – value of test probability

DISCUSSION

Analysis of the epidemiological situation concerning the incidence of depressive disorders proves that there are more and more students struggling with such problems. The risk of depressive disorders is associated, among others, with a new mode of education, building interpersonal relations, adaptation to the new environment, as well as the assumption of independence and responsibility [9, 13]. Hamasha *et al.* [14] showed that the presence of mental illness, lifestyle, the recent loss of a family member, and dissatisfaction with the teaching staff are risk factors for depressive disorders among students. However, Yousef *et al.* [15] showed that one of the main factors associated with depression in a group of surveyed nursing students was family pressure to choose the profession of nurse and lack of other opportunities for professional development. The conducted research shows that these circumstances are more important risk factors of depression in first-year students than in older students [16].

In our own research, the results obtained on the basis of the BDI-II scale (10.09 ± 8.63 points) indicate the lack/minimum occurrence of depressive symptoms among students. In the vast majority of respondents, no depressive disorders were found, but nearly 1/3 of them had depressive symptoms of varying severity. Jaworska *et al.* [13] obtained similar results (9.26 ± 6.32 points) among students of the Academy of Physical Education. For comparison, in the study conducted by Adamiak *et al.* [17], the incidence of depressive disorders was observed in every third person in the second year and in 14% of fourth-year students of the Faculty of Medicine. The analysis of literature by Suwalska *et al.* [18] confirms that up to 30% of medical students may suffer from depression.

The statistical analysis did not show any correlation between the incidence of depressive disorders among the surveyed students and the field of study. Different results were presented by Pietras *et al.* [19] – the risk of these disorders was 5 times higher in the group of students of pedagogy than in students of economics. The results of Zagdańska and Kiejna [1] confirm that the prevalence of depressive disorders among students of the humanities and pedagogical faculties was higher in comparison with students of medical, technical, architectural, and IT faculties. In turn, studies by Bresolin *et al.* [20] showed that speech therapy and nursing were the faculties where symptoms of moderate to severe depression were the most frequent in comparison with other medical faculties. The study also did not show any correlation between the incidence of depressive disorders and the number of hours spent at the university or a sense of burden on studies. However, studies conducted by Mikolajczyk *et al.* [21] and Alvi *et al.* [22] showed that the symptoms of these depressive disorders were more frequent in students who declared a sense of burden.

The obtained results did not confirm a relationship between the incidence of depressive disorders and gender, but the small number of men participating in this study should be emphasised. Statistical analysis also did not confirm the relationship between the incidence of these disorders and the marital status of students and their place of residence during their studies. The significant relations between the incidence of depressive disorders and gender and place of residence during studies were also not obtained by Mojs and Strzelecki [2]. Similar results with respect to gender, marital status, and place of residence during the study period were shown by Oskouei and Kahkeshan [23], and with respect to gender and marital status by Talaei *et al.* [24]. The studies of Tiji *et al.* [25] also did not confirm the relations between depression among students with gender, and the studies of Alvi *et al.* [22] with their place of residence in relation to their studies. However, the results of studies conducted by Jaworska *et al.* [13], Pietras *et al.* [19], Santangelo [26], and Mikolajczyk *et al.* [21] confirmed the relations between the incidence of depressive disorders and gender, showing that female gender increases the risk of depression. Similarly, the prevalence of depressive disorders was higher in the Cam and Top studies [27], while studies conducted by Mohebbi *et al.* [28] showed that it was students who had a higher rate of depression. In turn, studies by Zagdańska and Kiejna [1] and Mikolajczyk *et al.* [21] found that students who were not in relationships were significantly more likely to experience depressive episodes.

The type of relationship with family [29, 30] is important in the genesis of depressive disorders, and this was also found in our own research (more frequent occurrence of disorders in non-positive re-

lationships). At the same time, no relations between the incidence of depressive disorders and having siblings have been shown. Similarly, in the studies by Alvi *et al.* [22] there was no correlation between the number of siblings and the occurrence of disorders. However, Sherina and Nadarajan [31] indicated that those who had bad relationships with siblings were significantly more likely to show symptoms of depressive disorders.

In our study, the incidence of depressive disorders was more frequent among students who declared the presence of depressive disorders in their relatives. Similar results were obtained by Kumar *et al.* [32] and Hirata *et al.* [33]. Different results were presented by Alvi *et al.* [22] and Tiji *et al.* [25].

One of the symptoms of depressive disorders is suicidal thoughts [34]. In the surveyed students, the relations between the incidence of depressive disorders and the presence of suicidal thoughts were proven – the incidence of disorders correlated positively with the presence of suicidal thoughts. The same results were obtained in Arria *et al.* [35] and Beck *et al.* [12].

Circumstances related to studying and the need to make various decisions can be a burden for students and cause a feeling of stress. The more often students were exposed to stress, the more depressive symptoms were observed. Studies conducted by Nowak *et al.* [36] showed a similar relation.

One of the strongest stressors associated with depressive disorders in young people is trauma [29]. Our own research has shown a statistically significant relation between the experience of trauma and the incidence of depressive disorders. The same results were obtained by Vrana and Lauterbach [37].

Our research also showed strong positive correlations between the incidence of depressive disorders and the frequency of selected behaviours and emotions, such as aggressiveness, impulsiveness, feelings of sadness and depression, loss of interest and joy, avoidance of contacts and social encounters, inability to solve problems, sense of rejection, anxiety, fatigue and exhaustion, difficulty in focusing attention, and a pessimistic vision of the future. Similarly, studies conducted by Beck *et al.* [12] showed positive correlations between the incidence of depressive disorders and aversion, difficulty in concentration, indecisiveness, loss of energy, hobbies, pleasure and exhaustion, sadness, pessimism, anxiety, and suicidal thoughts.

Self-esteem plays an important role in the aetiology of depressive disorders, and it has been shown that people with low self-esteem are more likely to experience it [6, 38]. In our own research, depressive disorders were more common in students with low self-esteem. A similar correlation was shown by Michalak *et al.* [39]. Armstrong and Oomen-Early [40] also found a significant negative correlation between the occurrence of disorder and the level of self-esteem.

Furegato [41], on the other hand, showed that depression in nursing students was associated with an average level of self-esteem.

The appearance of depressive symptoms of varying severity does not always trigger a desire to seek help. However, some authors point out that already mild depressive symptoms are a serious problem of mental health, and students should be motivated to seek professional help [42]. According to some researchers, it is possible to identify threats to mental health among students. Identification of these threats, with the use of screening tools, will allow us to undertake interventions shaping the students' ability to monitor their own health condition and to seek professional help. This is extremely important in the case of nursing students because their good mental state is important for the whole area of health care [43].

CONCLUSIONS

The existence of depressive disorders among students is common with multidimensional relations.

Research results can be used in the practice of educating medical students.

The analysis of risk factors related to depressive disorders in students requires an in-depth study.

Results of in-depth studies of multidimensional relations between the incidence of depressive disorders among students and sociodemographic, psychological, and health-related factors and the course of studies will allow us to take action to improve support systems aimed at improving the mental condition of students.

Disclosure

The authors declare no conflict of interest.

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